

PROJECT NUMBER: 1620
PROJECT TITLE: Electrophysiological Studies
PROJECT LEADER: F. P. Gullotta
WRITTEN BY: C. S. Hayes
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I. NASAL EVENT-RELATED POTENTIALS (NERPs)

- A. Objective: To develop methods to objectively and reliably evaluate human responses to cigarettes, smoke constituents and tobacco flavorants.

- B. Results:

Cognitive NERP Study

Cognitive NERP experiments comparing natural and synthetic menthol have been initiated in ten subjects with the goal of determining whether subjects can differentiate between the menthols. Employing synthetic menthol as the standard stimulus and natural menthol as the target stimulus, nine subjects have been tested to date.¹ Both the NERP and the psychophysical data demonstrate that subjects are able to discriminate between the two different menthols. A late positive component (LPC) is being recorded to the natural menthol targets that is not apparent in the synthetic standards. Interestingly, for most of the subjects, their actual performance is much better than their perceived performance.

Quantification of the NERP data from the natural menthol vs CO₂ comparison continues. Preliminary analyses of the data were not very informative due to noise in the data. The data have been filtered and are in the process of being reanalyzed.

- C. Plans: Complete testing of ten subjects in the cognitive paradigm comparing natural and synthetic menthol. Complete statistical analyses of the data from the CO₂ vs. natural menthol comparison and begin analysing the natural vs. synthetic menthol data. Further plans include the testing of mixtures of natural and synthetic menthol, d-menthol, (+)-isomenthol and other yet-to-be determined menthol-like compounds.

- D. Reference:

1. Martin, B. R. Notebook No. 8689, pp. 32-84.

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